AMENDMENTS TO THE SPECIFICATION

I. Please replace the original SPECIFICATION, Pages 1-6, in its entirety, with the following amended Specification:

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to a light guide. More particularly, the present invention relates to a light guide frame with a plurality of light guiding tracks, which provides lighting regions of different shapes, such as a line-shape or a circular shape.

Background of the Invention

~~As consumable electrical goods develop, the~~ The backlight modules, which provide lighting, are broadly ~~applied to~~ used in various ~~fields. Such~~ electronic devices, such as ~~a~~ cell ~~phone~~ phones, ~~a notebook~~ notebooks, ~~a~~ screen or a keystroke of ~~a PDA~~ PDAs, ~~a~~ Touch-~~pad~~ pads, ~~and even a~~ Pointing Sticks, etc.

If a particularly shaped ~~there are needs of particular~~ lighting arrangement is needed, e.g., in the shape of ~~like~~ a ~~special~~ line or loop ~~taken~~ positioned along a border of a display, ~~with predetermined shape, they~~ conventionally ~~uses~~ a plurality of lighting

~~member~~ members, ~~like~~ such as LEDs are arranged along the display ~~with~~ according to the predetermined shape. However, the ~~way using~~ usage of a plurality of LEDs ~~needs more ones to spread in the~~ located at particular positions is costly ~~so as to the conventional display does not have the cost cutting down~~. Also, the ~~The~~ LEDs usually ~~space an~~ are spaced apart predetermined ~~interval~~ intervals from each other instead of being arranged in a ~~arranging in a one to one or~~ side-by-side manner, that causes the unevenness of the luminance value ~~of~~ at the conventional display ~~cannot evenly processed~~.

Hence, the improvement over the prior art ~~improved~~ is required to overcome the disadvantages thereof.

SUMMARY OF THE INVENTION

The object of the invention is therefore to ~~specify~~ provide a low cost light guiding frame with a plurality of light guiding tracks, which provides high luminance~~, a~~ and high uniformity value of the light which is emitted, ~~lighting~~ following a predetermined shape, such as linear or loop-like ~~like a lined-shape or a looped-shape, and a low cost~~.

According to the invention, this object is achieved by forming a light guiding frame with a plurality of guiding tracks, which is adopted for a backlight module having at least one lighting member. The light guiding frame includes at least one forked lighting member, a reflection member enclosing the forked lighting member, and a light-guide member ~~connecting~~ connected to the forked lighting member and having a predetermined shape. The forked lighting member has a containing portion receiving the lighting member and a plurality of guiding tracks extending from the containing portion~~,~~. ~~the~~ The tracks transmit ~~the~~ light ~~emitting~~ emitted from the lighting member to the light-guide member ~~for~~ which is a lighting element having ~~with the~~ a predetermined shape.

To provide a further understanding of the invention, the following detailed description illustrates embodiments and examples of the invention. Examples of the more important features of the invention thus have been summarized rather broadly in order that the detailed description thereof that follows may be better understood, and in order that the contributions to the art may be appreciated. There are, of course, additional features of the invention that will be described hereinafter and which will form the subject of the Claims appended hereto.

BRIEF DESCRIPTION OF THE DRAWINGS

These and other features, aspects and advantages of the present invention will become better understood with regard to the following description, appended claims, and accompanying drawings where:

Fig. 1 is a perspective view of a first embodiment of the present invention;

Fig. 2 is a perspective view of a second embodiment of the present invention;

Fig. 3 is a perspective view of a third embodiment of the present invention; and

Fig. 4 is a perspective view of a fourth embodiment of the present invention.

DETAILED DESCRIPTION OF THE EMBODIMENTS

Referring to Fig. 1, the present invention provides a light guiding frame 1 with a plurality of guiding tracks ~~is applied for~~ and may be used in a backlight module having at least one ~~on kind of~~ lighting member 2. The lighting member 2 is LED (Light Emitting Display). The light guiding frame 1 includes at least one forked lighting member 10, a reflection member 11 enclosing the forked lighting member 10, and a light-guide member 12 ~~connecting~~ connected to the forked lighting member 10 and having a predetermined shape. The forked lighting member 10 ~~including~~ includes a containing portion 101 receiving the lighting member 2 and a plurality of tracks 102 extending from the containing portion 101 for transmitting the light emitting from the lighting member 2 to the light-guide member 12. The light-guide member 12 ~~provides~~ forms a displaying area 5 ~~with a~~ which may have various ~~shape~~ shapes, ~~like~~ including a ~~lined-shape~~ line-shaped and ~~a looped-shape~~ loop-shaped light-guide member. The reflection member 11 encloses a side surface and further a bottom surface of the light-guide member 12, so ~~as to~~ that the light of the lighting member 2 emits outwardly ~~form~~ through a top surface of the light-guide member 12 for ~~meeting~~ providing the high luminance thereof.

The light-guide member 12 includes a plurality of light-guide stripes 120 respectively ~~relative~~ related to the tracks 102, ~~and~~ so that the light ~~transmits~~ is transmitted therealong and follows a first path 21 ~~for~~ in the displaying area 5, ~~with~~ thus forming two parallel lines, as best shown in Fig. 1.

With respect to Fig. 2, the light-guide member 12 ~~is in~~ has a U shape, and ~~has~~ includes two first light-guide stripes 121 and a second light-guide stripe 122 connecting the two first light-guide stripes 121~~; wherein the~~ at the first ends thereof. The second light-guide stripe 122 also connects with the tracks 102~~,~~ . The two first light-guide stripes 121 respectively have two inner side edges~~, two outside most of the~~ . As shown in Fig. 2, the outmost tracks 102 and the second light-guide stripe 122 ~~together outline~~ form an inner triangle~~,~~. ~~and the two~~ The inner side edges of the first light-guide stripes 121 are spaced a distance ~~has a space~~ "b" ~~formed~~ therebetween. ~~And being longer~~ The distance "b" is shorter than a length of a bottom line "a" of the inner triangle ~~for the light transmitting effectually by~~ in order to attain effective transmission of the light along the first path 21 and for reducing ~~preventing restrictions from stationary light and~~ optical losses.

Referring again to Fig. 2, the second light-guide stripe 122 has a plurality of reflecting faces 3 respectively corresponding to the tracks 102~~, thus the~~ . The light ~~transmits~~ transmitted along the tracks 102 splits at the reflecting faces 3 and further follows along a second path 22 and along the path 21 ~~for the light evenly spreading in the second light-guide stripe 122~~. ~~The~~ Each reflecting ~~faces~~ face 3 ~~each includes~~ has a variable depth for adjusting a luminous flux ~~thereby~~, and further includes a plurality of round corners 31 to avoid the light ~~gathering~~ concentration at the corners 31.

The present invention uses the light-guide member 12 ~~to be~~ formed of the light-guide stripes 120 (as in Fig. 1) or having ~~in~~ a U shape (as in Fig. 2) to meet different requirements and to ~~decreases the numerous~~ decrease the number of the lighting ~~member~~ members 2 to ~~have a low~~ reduce manufacturing ~~cost~~ costs.

With respect to Fig. 3, the light-guide member 12 ~~is in~~ has a ~~rectangular frame shape, which has~~ rectangular shape and includes two first light-guide stripes 121, a second light-guide stripe 122 connecting two first ends of the two first light-guide stripes 121, and a third light-guide stripe 123 connecting two second ends of the two first light-guide stripes 121~~, the~~ . The two first light-guide stripes 121 respectively have two inner side edges~~, two outside most of the~~. Two outmost tracks 102 and the second light-guide stripe 122 ~~together~~ outline an inner triangle~~, and the~~. The two inner side edges of the light-guide stripes 121 are spaced a distance ~~has a space~~ "b" ~~formed~~ therebetween. ~~and being longer~~ The distance "b" is shorter than a bottom line "a" of the inner triangle for attaining effective transmission of the light along ~~for the light transmitting effectually by~~ the first path 21 and ~~preventing restrictions from stationary light and~~ for reducing optical losses.

Referring again to Fig. 3, the third light-guide stripe 123 has a ~~gradual narrow~~ gradually-narrowing section 4 formed ~~on~~ in a middle area thereof to ~~meet~~ reach high luminance according to a principle of that the brightness equals to the luminous flux ~~of~~ per unit cross-section area. When the luminous flux is fixed, the luminance increases as the unit cross-section area decreases.

Shown in Fig. 1 and Fig. 2, ~~numerous~~ where the number of the tracks 102 is two, the two tracks 102 are respectively ~~connecting~~ connected to the light-guide stripes 120 or to the first light-guide stripes 121 of the U-shaped light-guide member 12 in a one-to-one manner, so that the light ~~transmits by~~ is transmitted along the first path 21~~; and furthermore,~~ . Each of the second light-guide stripes 122 of the U-shaped light-guide member 12 ~~each~~ has two reflecting faces 3 respectively corresponding to the tracks 102 for transmission of the light ~~transmitting by~~ along the ~~first~~ path 22.

As shown ~~Shown~~ in Fig. 3, ~~numerous~~ the number of the tracks 102 is three, wherein two ~~outside most of the~~ outer tracks 102 respectively ~~connecting~~ are connected to the first light-guide stripes 121~~,~~ . In this arrangement, ~~and~~ the second light-guide stripe 122 ~~concaves~~ includes two opposing reflecting faces 3 formed thereat both corresponding to a third(middle) ~~middle of the tracks~~ track 102 which extends between the two outer tracks 102 for the light ~~transmitting by~~ transmission along the ~~first~~ path 23. The luminous flux of the middle of the tracks 102 can be varied by a width thereof.

~~Descriptions mentioned above, the~~ The arrangement of the present invention with a rectangular frame provides a ~~looped-shape~~ loop-shaped displaying area 5 with ~~high uniformity~~ highly uniform light emission.

Furthermore, the light-guide member 12 ~~connects at least one~~ may be connected to additional forked lighting member 10 to increase the luminance thereof. Referring to Fig. 4, the light-guide member 12 is in a rectangular-frame shape, and ~~numerous~~ the number of the forked lighting ~~member~~ members 10 is two. The two forked lighting ~~member~~ members 10 are symmetrically ~~dispose on~~ positioned at opposing sides of the rectangular light-guide member 12 and respectively ~~connect~~ are connected to the second light-guide stripe 122 and ~~the~~ a third light-guide stripe 123. The second light-guide stripe 122 and the third light-guide stripe 123 each has two reflecting faces 3 disposed ~~on~~ at two ends thereof and respectively ~~connecting~~ connected to the tracks 102~~, and~~. Each of the reflecting faces 3 ~~each~~ has a plurality of round corners. As the result, the light ~~transmits~~ follows both ~~by~~ along the first path 21 and the second path 22. The two first light-guide stripes 121 each has a ~~gradual narrow~~ gradually-narrowing section 4 in the middle thereof to keep the high uniformity of the emitted light ~~thereof~~.

The present invention uses the light-guide member 12 ~~with~~ which may have various predetermined ~~shape~~ shapes to ~~meet~~ provide ~~various~~ the displaying ~~area~~ areas 5~~,~~ ~~decreases the numerous~~ of different shapes. The number of the lighting ~~member~~ members 2 is reduced to ~~get low~~ lower the manufacturing cost ~~and has the reflecting~~

~~faces 3 arranged,~~. The light is uniformly ~~transmits~~ transmitted in the light-guide member 12 as the result of reflection at the reflecting faces 3 arranged at predetermined locations thereat. The present invention further uses more than one lighting member 12, like two, to increase luminance of the light-guide member 12. The present invention should be applied to not only consumable electrical goods but also products for recognizing or indicating.

It should be apparent to those skilled in the art that the above description is only illustrative of specific embodiments and examples of the invention. The invention should therefore cover various modifications and variations made to the herein-described structure and operations of the invention, provided they fall within the scope of the invention as defined in the following appended claims.